INL teams with Idaho teachers to make science engaging and accessible. Hands-on experiences — like this chromatography experiment — help hook kids on science.

## INL marks National Lab Day with longstanding commitment to science education

By Mike Wall, *INL Communications and Governmental Affairs*

***Effective STEM education in action: Kuna High School's DaNel Huggins shows how she helps her students understand nuclear chain reactions.***

The United States has long led the world in technological innovation, but now that dominance is under serious threat. Between them, China and India are minting about 1 million new engineers every year, compared to the U.S.'s 70,000. By the end of 2010, 90 percent of the world's scientists and engineers will live in Asia.

If the U.S. hopes to stay on top of the technological heap, it needs to engage more school kids in science, technology, engineering and math (STEM). And the country must do a better job of teaching the students it does manage to engage. In a recent assessment of industrialized nations, American 15-year-olds posted below-average scores in both science and math.

An ambitious new initiative called National Lab Day attempts to accomplish both of these goals. National Lab Day — a joint venture of the Department of Energy (DOE), the National Institutes of Health, the National Science Foundation and many public and private partners — connects scientific professionals with teachers around the country. The goal is to bring exciting, hands-on, discovery-based science to students from kindergarten through high school.

***At one recent INL-sponsored expo, kids got to drive model moon rovers and see rocks similar to the ones astronauts found on the moon.***

Although National Lab Day is being celebrated May 12, it represents a continuous, permanent commitment to transform K-12 STEM education in America. DOE's Idaho National Laboratory shares this commitment. And so do Battelle Energy Alliance — which operates the lab for DOE — and BEA's nonprofit parent organization, Battelle Memorial Institute. Earlier this week, Rich Rosen, BMI's vice president for education and philanthropy, issued a National Lab Day call to action. He urged BMI-affiliated scientists and engineers — and there are thousands of them, as the institute helps oversee six DOE national labs — to join the effort to reinvigorate American science and math education.

INL and BEA have been doing their part for a long time. Over the last four years, for example, the lab has contributed nearly $1.7 million to enhance and promote STEM education around Idaho. And INL gives more than just money; lab employees also donate much of their time and expertise to students and teachers.

"STEM education is a priority for INL and Battelle Energy Alliance," says Anne Seifert, INL's STEM education coordinator. "Many of us were inspired to grow in our careers because of an outstanding mentor or two. It's now our responsibility to ignite the passion for science with the younger generation."

The following list summarizes INL's ongoing efforts to improve STEM education throughout the state.

● Teacher Mini-Grants: This program helps Idaho teachers buy STEM-related school supplies and equipment. Over the last two years, INL has awarded about $160,000 in mini-grants.

● "Extreme Classroom Makeover" Grants: In both 2009 and 2010, INL awarded two $10,000 grants to help underfunded Idaho schools become effective STEM learning centers. This year's grants went to Shoshone-Bannock High School, on the Fort Hall reservation, and Washington Elementary, in Caldwell.

● Teaming Teachers with INL: This eight- to 10-week summer program matches schoolteachers with INL scientists and engineers. Teachers are exposed to the "real world" of science, technology and research — and they get an hourly wage for participating.

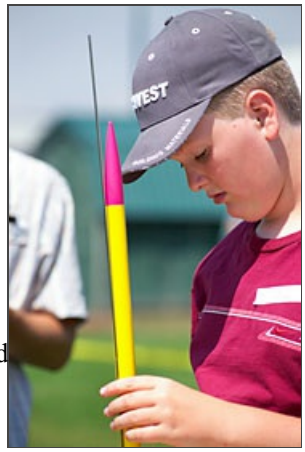
● Pre-Service Teacher Program: This is a 10-week paid summer internship, sponsored by DOE's Office of Science, for university students who have decided on a teaching career. Future educators work in the field alongside INL researchers and experienced "master teachers."

● Energy for Educators: This program provides hands-on energy-related lesson plans and classroom activities for Idaho teachers. One hundred Idaho teachers attended INL's 2009 Energy for Educators workshop.

● GIANTS (Governor's Industry Award for Notable Teaching in Science): INL co-sponsors this annual program honoring outstanding Idaho science and math teachers. This year, four teachers each won a $2,000 award, plus $200 for school supplies.

● i-STEM: This is a wide-ranging effort to improve Idaho's K-12 STEM curricula, Internet technology services and classroom tools. INL is teaming with the Idaho Department of Education, teachers and businesses to effect meaningful, systemic change. For example, two workshops this summer will help 200 Idaho teachers integrate energy, engineering, robotics and space-science topics into their classrooms.

● Student Action Teams: This eight-week summer program gives high-school students the chance to learn from INL's scientific and technical experts. Students assist INL scientists on cutting-edge research and get paid an hourly wage.



***INL's recent summer rocket camp helped teach kids about aerodynamics and propulsion systems.***

● INL Scholastic Tournament: INL has sponsored this science quiz-bowl competition for two decades. This year, 800 students from 73 Idaho high schools competed; the top three schools in each of three divisions went on to compete at the National Science Bowl in Washington, D.C.

● "Wind for Schools" program: INL scientists have set up several windmills to teach students about wind energy. Windmill data streams to schools in the region and across the state, where students can analyze and interpret it for classroom projects.

***Excited students volunteer to participate in a demonstration at one of INL's science expos.***

● Hispanic Youth Symposium: This annual academic retreat emphasizes the importance of education to Idaho's Latino high schoolers and awards scholarships to outstanding students (this year, 190 students received a total of $3.8 million). INL has been a co-sponsor of the HYS since its inception in 1990.

● Dual Credit Scholarship Program: This new INL effort, launched in December 2009, helps Idaho high-school students pay for college-level STEM courses.

● STEM expos: INL, along with partner institutions such as local universities, puts on several of these every year to help kids learn science and math concepts. In 2010, 1,200 students attended a STEM expo in Nampa, while 500 came to the Engineering Extravaganza at Boise State University.

● Education Transfer Program: INL helps outfit Idaho schools, giving them its excess computers, printers, modems, routers and other technology equipment.

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